Logic MMC

Installation Manual

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INSTALLING LOGIC MMC

Important note for customer attention - this could affect your warranty:

It is important that you refer to this document. Information is provided concerning the installation procedure from unpacking and assembling to powering up the system ready for use.

✍ *Failure to follow these procedures and recommendations could invalidate the manufacturer's warranty.*

✍ *Failure to follow these procedures or performing unauthorised modifications to the equipment could also invalidate compliance to EMC regulations.*

✍ *Please check carefully the packages you have been supplied. If there is a shortage or evidence that any item has suffered transit damage then inform the carrier and AMS Neve as soon as possible.*

✍ *Please note that modules, cards or cables should not be "hot-plugged" (i.e. inserted or removed with the power on). Hot-plugging can stress the interface components which may lead to failure. Items returned for repair with this kind of damage are not covered under warranty.*

✍ *All front panels must be fitted to the racks to achieve the required cooling. If the rack units are operated with the panels removed overheating will occur and may lead to component failure not covered under warranty.*

✍ *Read the following section before starting to power up the system. It is extremely important that the following checks are carried out prior to switch-on.*

Initial Checks

➤ Refer to the correct procedures described on the following page when handling static sensitive devices.

➤ Remove the transit packing carefully and check for any signs of shipment damage.

➤ Remove the transit disk from the floppy drive in the 4U Encore Processor Unit.

➤ Ensure all keys on the Keyboard are free from any packing material.

Optional Equipment

Please note that this manual includes all the current options available for a Logic MMC installation. Custom interconnects when required are included in a separate section - see contents.

Static Sensitive Devices Handling Precautions

Introduction

This Specification details the precautions to be used for the Protection of Semi-Conductor Devices.

Static Charge build up in humans, tools, fixtures etc., could appear as a voltage difference applied between the leads of a device, leaving either immediate or latent damage.

Component and Package Identification from AMS Neve plc

Containers and Packages holding Semi-Conductive Devices will be suitably marked.

Approved containers consist of

- ❑ A rigid plastic container lined with conductive foam.
- ❑ A conductive plastic bag of a size adequate to completely contain the item.

Handling of Static Sensitive Devices

General Precautions

- ❑ Personnel handling these must not wear outer clothing which will generate a static charge. Cotton or linen is preferred. Wool frequently contains man made additives. Nylon or man made fibre outer garments or dust coats must not be worn.
- ❑ Freshly xeroxed/photostat copies can hold a substantial static charge and should be kept well away from static sensitive devices.
- ❑ All bench surfaces where these devices may be handled must be conductive and maintained at earth potential.
- ❑ Before removing a device from the protective material personnel must be adequately earthed. The device should not be handled by its leads.

Static Sensitive Devices to be returned to AMS Neve plc

All containers and packages containing semi-conductive devices should be suitably marked with a warning 'STATIC SENSITIVE'.

Approved containers consist of

- ❑ A rigid plastic container lined with conductive foam.
- ❑ A conductive plastic bag of a size adequate to completely contain the item.

Cable Lengths

The maximum length of the digital communication cable (Tranlink) between the console and the racks which can be guaranteed to work is 30 metres. However, lengths of up to 50 metres have worked successfully but care must be taken to avoid sharp kinks in the cable and runs in the proximity of interfering signals. The standard length supplied is 10 metres. Any other length should be specified at the time of ordering.

Please note that the AMS Neve AES/EBU interface complies with the BBC AES/EBU specification. This includes operational lengths of interconnecting cable of up to 100 meters. If lengths greater than this are needed, please contact the AMS Neve Contract Engineering Department, stating the operational cable length required.

AES/EBU cable characteristic impedance - 110ohm +/- 20%.

The maximum length of the Keyboard, Mouse and VGA cables between the Encore Processor Unit and the console is 10 metres. Logic MMC is supplied as standard with a 10 metre cable bundle consisting of the following :

Tranlink	Audio cables for talkback, monitoring, etc.
Two VGA cables	Mouse cable
Keyboard cable	

If the cable run from the racks to the console is greater than 10 metres then a different set of cables must be specified at the time of ordering. Under these circumstances, the Encore rack must be sited separately from the other rack mounted components no more than 10m cable length away from the console.

There will be three different cable lengths to consider:

1) The VGA, Mouse & Keyboard cables will be 10 metres in length.

2) The Racks to Console Tranlink is subject to the usual limits for a Tranlink. The Racks to Console Audio cable will be the same length as this Tranlink.

3) The Tranlink from the Racks to the Encore rack will need to be specified, depending on where the Encore rack is to be sited, again subject to the usual limits for a Tranlink.

Where screened cables are specified it is important that these are used to maintain EMC compliance.

Rack-Mounting

The rack units should be installed in a 19" cabinet with access to the front and rear. A rack depth of 700mm minimum is required for clearance of cabling and connectors. Ventilation panels must be provided to allow a free flow of air both across the rack and from the front to the back. It is recommended that chassis support rails are used to provide rear support to all units over 3U.

The 17U rack unit is very heavy (over 40kg) and no attempt should be made to move or lift these without assistance.

Cooling

No specific air conditioning is required for the racks, provided that there is a free flow of air through the rack from front to back, and that the ambient air is maintained below 30 degrees centigrade. Therefore it is an installation requirement that all racks are mounted horizontally.

✍ *The bulk power supply requires 150mm (6inches) of clearance front and rear to maintain adequate airflow.*

✍ *The **MIOS rack** is fan cooled and it is recommended that it should not be sited in noise critical environments.*

✍ *If the **MIOS rack** is a '**Stage box**' it will use natural cooling and a minimum of 4U should be left above the rack to maintain adequate cooling - **a Stage MIOS box has a vented lid and is fitted with mic-line modules only.***

✍ *As the **Encore Processor Unit** and **Multichannel AES I/O Unit** are fan cooled, it is recommended that they should not be sited in noise critical environments. If it is required that the Encore unit is located in the control room, then an enclosure which minimises the noise is recommended.*

✍ *Console ventilation slots should not be blocked and air should be free to convect through the console.*

✍ *The console must not be powered up or operated with the dust cover in place.*

✍

Technical Earth

To comply with safety regulations, all AMS Neve systems are supplied to the customer with the mains earth cable connected to the system chassis. It is the customer's responsibility to comply with the local safety regulations; but it is normal practice, after connecting the system to technical earth to remove the 0V to chassis links as shown on the Power and Technical Earth Interconnect diagram.

The mains earth connection to the power supplies must not be disconnected.

Safety Earth

Some components of this system are designated high earth leakage (>3.5mA from Live to Earth) this means that an earth connection is essential to ensure the safety of the equipment. If this is the case the equipment will be labelled adjacent to the safety earth stud. Separate earth studs are provided on the equipment which can be strapped together with green/yellow cable of 1.25mm^2 or greater. These should be taken to a guaranteed secure earth point within the installation. The reason for this is to guarantee the safety of the equipment even if the safety earth within the mains supply cable should become detached.

Mains Power

The console is DC powered and requires a bulk PSU to be fitted in a machine room. This unit holds two hot-swap modules each of which has an independant mains feed which gives full redundancy.

Typical power consumption given below is based on fully populated racks.

Check that the voltage selector on the rear of the Encore Processor Rack, Relay Control Unit and Remote 8 Channel Level Control Unit is set to the correct operating voltage. All other rack units are auto voltage sensing.

The input voltage range and fuse rating are engraved on the equipment label adjacent to the mains input connector.

Power Requirements

Console	Power Consumption (Watts)
12 Fader Console	320
24 Fader Console	490
36 Fader Console	660
48 Fader Console	830
Meter Bridge	100

System Racks	Power Consumption (Watts)
Encore Processor Rack	100
SPS Rack (17U)	800
MIOS Rack	150
Relay Control Unit	20
Remote 8Ch Level Control Unit	20
Multichannel AES I/O Unit	60

Console Data

Refer to the drawings at the back of this manual.

Rack Data

Rack Type	U	Depth mm (inches)	Height mm (inches)	Approx. Weight kg (lbs)
Console PSU	2	351 (14)	89 (3½)	13 (29)
Encore Processor	4	460 (18)	178 (7)	30 (66)
System SPS Rack	17	572 (22½)	756 (29¾)	70 (154)
MIOS Rack	4	490 (19)	178 (7)	21 (46) *
Relay Control Unit	2	254 (10)	89 (3½)	8 (18)
Remote 8Ch Level Control Unit	2	254 (10)	89 (3½)	8 (18)
Multichannel AES I/O Unit	2	425 (17)	89 (3½)	9 (20)

* The weight of the MIOS rack is based on a rack populated with 6 mic modules.

Connecting the System

When the units are in position and all the cables have been identified and prepared, connect the system as shown in the Custom Interconnect section.

Console to Racks Audio Interconnect

The Audio Cable from the Console is supplied with cable ends stripped and tinned only ready for custom installation requirements.

XLR Pin Outs

The pin out for XLRs is:

- ❑ Pin 1, Screen
- ❑ Pin 2, Phase (or Hot)
- ❑ Pin 3, Anti-Phase (or Cold)

and for dual circuit connectors:

- ❑ Pin 4, Phase (or Hot), second circuit (or B channel)
- ❑ Pin 5, Anti-Phase (or Cold), second circuit (or B channel)

Pin 1 for outputs is directly connected to the chassis. Pin 1 for inputs is R.F. coupled to the chassis to provide a screen but avoiding hum loop problems. The exception is the Mic/Line Unit where pin 1 for inputs is directly connected to chassis to provide phantom power.

The shell connection of the XLR connector is a direct connection to the chassis and should be used for the O/P screen connection as this gives an improved R.F. connection and screening.

Audio Signals

All audio from the ADC and DAC cards are balance audio signals.

Meter Bridge VU Meters

If the console is supplied with the optional Meter Bridge the input connector to the 2 VU meters is made via the 'AUXILIARY' port on the console connector panel.

Mating Connector Required: 15-way D type male

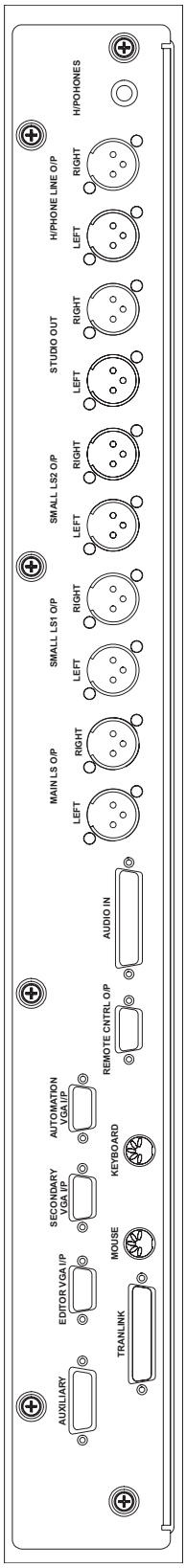
VU Meter	Signal	Pin No.
L	Hot	1
	Cold	10
R	Hot	2
	Cold	11

VARICON TABLES AND CUSTOM INTERCONNECTS

Varicon tables and custom interconnects are shown on the following pages:

CONNECTOR DETAILS

Console Connections



Audio Input Cable Wiring

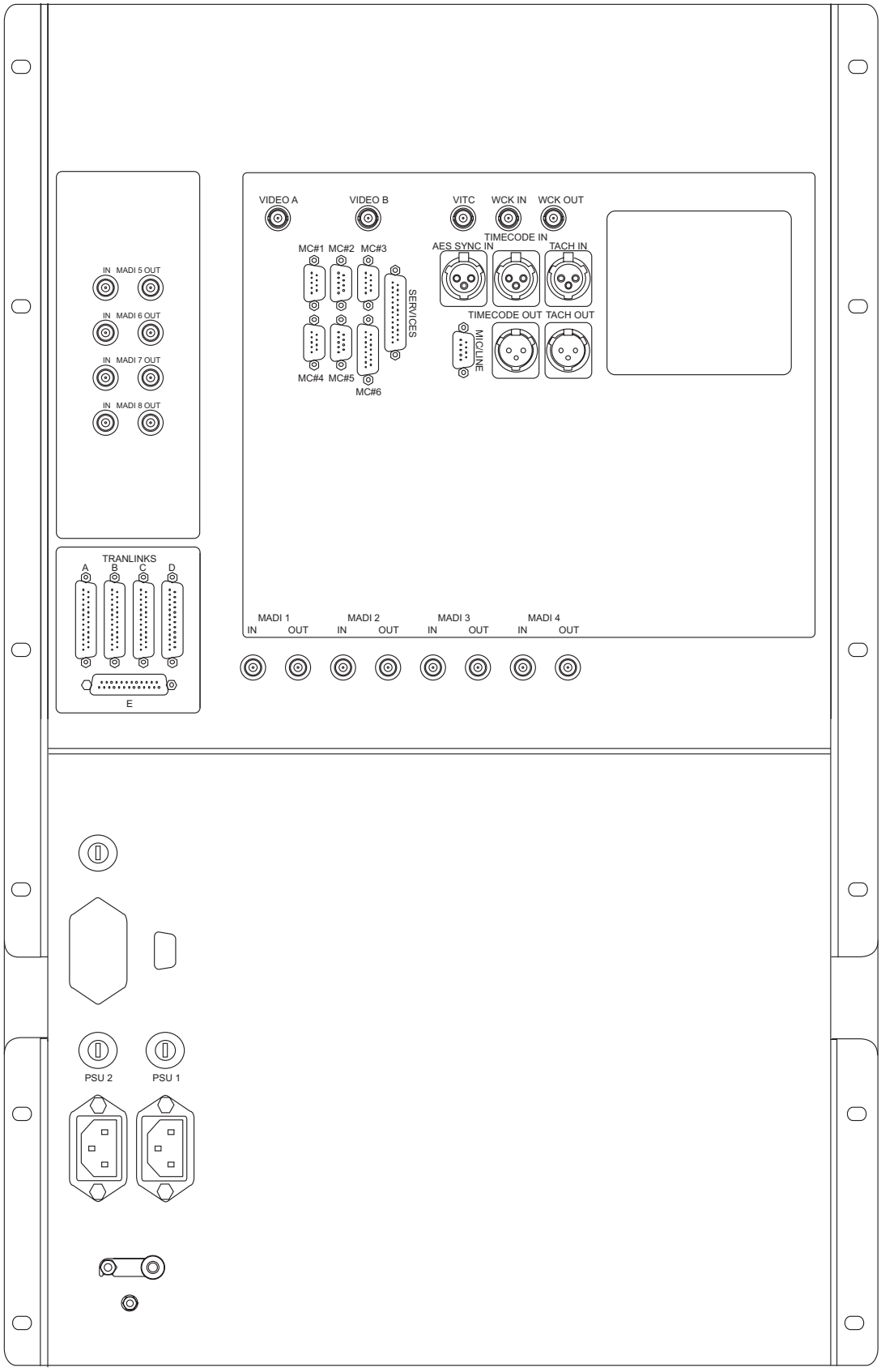
Location: **Rear of Console**

Mating Connector: **25-way D type male**

Cabling Information: **Use high quality screened twisted-pair cable**

Pin No.	Signal	
1 14	+ -	Monitor 1 Left
2 15	+ -	Monitor 1 Right
3 16	+ -	Monitor 2 Left
4 17	+ -	Monitor 2 Right
5 18	+ -	Studio Left
6 19	+ -	Studio Right
7 20	+ -	Phones Left
8 21	+ -	Phones Right
9 22	+ -	VU Left
10 23	+ -	VU Right
11 24	+ -	Talkback

SPS Rack


IN MADI 5 OUT
IN MADI 6 OUT
IN MADI 7 OUT
IN MADI 8 OUT
TRANLINKS
A
B
C
D
E
VIDEO A
VIDEO B
VITC
WCK IN
WCK OUT
TIMECODE IN
AES SYNC IN
TACH IN
MC#1 MC#2 MC#3
SERVICES
MC#4 MC#5
MC#6
TIMECODE OUT
TACH OUT
MIC/LINE
MADI 1
IN OUT
MADI 2
IN OUT
MADI 3
IN OUT
MADI 4
IN OUT
PSU 2
PSU 1

MACHINE CONTROL PORTS #1,#2,#3,#4 and #5

Location: **Rear of SPS Rack**
Mating connector: **DE 9P**
Cabling Information: **Use a twisted pair screened cable with EMC hoods. Twisted pairs should be used with Rx–, Rx+ and Tx–, Tx+ as twisted pairs. The cable screen should be 360° terminated to an EMC backshell at each end.**

Pin No.	Signal
1	GND
2	RX–
3	TX+
4	GND
5	$\overline{\text{RTS}}$
6	GND
7	RX+
8	TX–
9	GND

MACHINE CONTROL PORTS #1,#2,#3,#4 and #5

Serial RS422 Device e.g. Sony 9-pin (P2 Protocol)

Location: **Rear of SPS Rack**
Cabling Information: **Use high quality screened twisted–pair cable, paying careful attention to correct pairing.**
Screens should be 360° terminated to EMC backshells at both ends.
Length as required – recommended maximum 50m.

Logic MMC

Machine Control
9 Way D Male
(Jackscrews)

Pin	Signal
3	Tx+
8	Tx–
7	Rx+
2	Rx–
4	0v

Serial RS422

RS422
9 Way D Male
(Jackscrews)

Pin	Signal
3	Rx+
8	Rx–
7	Tx+
2	Tx–
1	0v
6	Screen

MACHINE CONTROL PORT #2 & #4

ES1–11 Cable (also ES1–12, ES/2, Synchronet)

Location: **Rear of SPS Rack**

Cabling Information: **Use high quality screened twisted–pair cable, paying careful attention to correct pairing.**
A screened twisted-pair cable should also be used for the XLR connection with the screens connected to both ends.
Screens should be 360° terminated to EMC backshells at both ends.
Length as required – recommended maximum 50m.

Logic MMC

Machine Control
9 Way D Male
(Jackscrews)

Pin	Signal
3	Tx+
8	Tx–
7	Rx+
2	Rx–
4	0v

ES1–11

15 Way D Male
(Jackscrews)

Pin	Signal
1	Rx+
2	Rx–
3	Tx+
4	Tx–
8	0v

MACHINE CONTROL PORT #6

Location: **Rear of SPS Rack**
Mating connector: **DA 15 P**
Cabling Information: **A screened twisted-pair cable should be used with the screens 360° terminated to EMC backshells at both ends.**
Signal pairs 1 & 2, 3 & 4, 5 & 6, 9 & 10 and 14 & 15 should all use twisted pairs of the same cable.

Logic MMC **Sony 9-Pin**

Pin No.	Signal	Pin No.
1	Tx+(B)	3
2	Tx– (A)	8
3	Rx+(B)	7
4	Rx– (A)	2
5	TIC– (A)	
6	TIC+(B)	
7		
8	0v	1
9	CODE– (A)	
10	CODE+(B)	
11	TL EXT	
12	D-RECON	
13	MUTE	
14	FRAME– (A)	
15	FRAME+(B)	
SCREEN	SCREEN (CHASSIS)	

MACHINE CONTROL PORT #6

Location: **Rear of SPS Rack**
Mating connector: **DA 15 P**

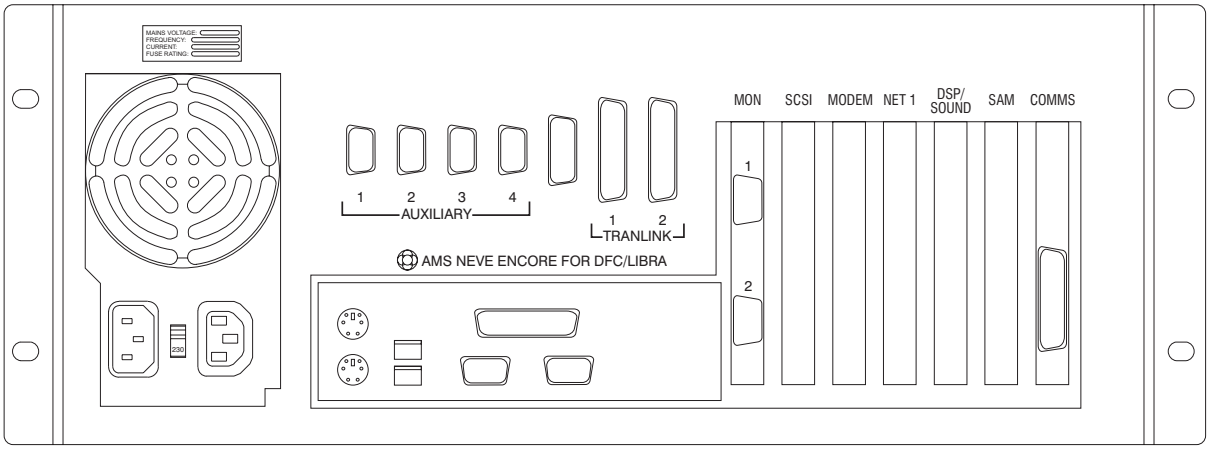
Logic MMC		**Standard ES Bus Cable**		**ES1–11, ES1– 12, ES/2, Synchronet**
Pin No.	**Signal**		**Pin No.**	**Signal**
1	Tx+(B)		1	RX+
2	Tx– (A)		2	RX-
3	Rx+(B)		3	TX+
4	Rx– (A)		4	TX-
5	TIC– (A)		5	TIC-
6	TIC+(B)		6	TIC+
7		NO WIRE	7	+5
8	0v		8	0v
9	CODE– (A)		9	CODE– (A)
10	CODE+(B)		10	CODE+(B)
11	TL EXT		11	TL EXT
12	D-RECON		12	D-RECON
13	MUTE		13	MUTE
14	FRAME– (A)		14	FRAME– (A)
15	FRAME+(B)		15	FRAME+(B)
SCREEN	SCREEN (CHASSIS)		SHELL	SCREEN (CHASSIS)

SERVICES PORT

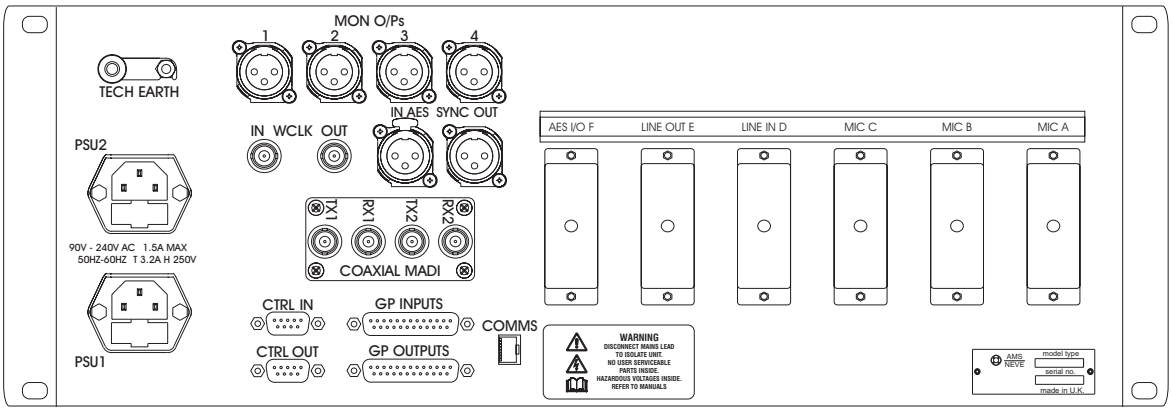
Location: **Rear of SPS Rack**
Mating connector: **DB 25 P**
Cabling Information: **A screened twisted-pair cable should be used with the screens 360° terminated to EMC backshells at both ends.**
If this port is taken to more than one destination then all cable screens must still be terminated to EMC backshells.

Pin No.	Signal
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
14	SYNC COM
15	SYNC NC
16	SYNC NO
17	RL1 COM REC
18	RL1 NC REC
19	RL1 NO REC
20	RL2 COM PLAY/ADR
21	RL2 NC PLAY/ADR
22	RL2 NO PLAY/ADR

Encore Processor Rack



MIOS Rack



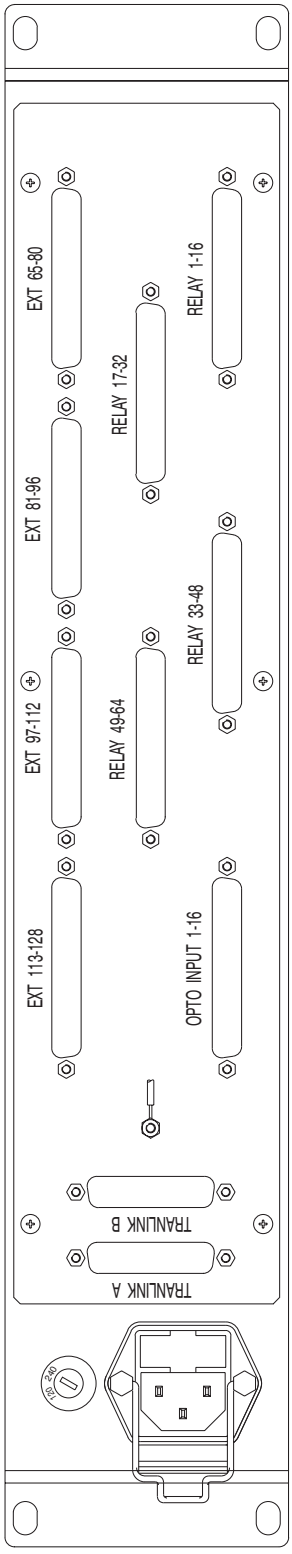
✍ *See MIOS User Guide for more information.*

56 Way Varicon Connections

All connectors on the rear panel are 56 pin Varicon (Elco, Varelco, etc), male.

PIN		Mic In Module	Line In Module	Line Out Module	AES I/O Module
E	Hot	Mic In 1 A	Line In 1	Line Out 1	AES In 1/2
F	Cold				
A	Screen				
B	Hot	Mic In 2 A	Line In 2	Line Out 2	AES In 3/4
C	Cold				
H	Screen				
J	Hot	Mic In 2 B	Line In 3	Line Out 3	AES In 5/6
K	Cold				
D	Screen				
R	Hot	Mic In 1 B	Line In 4	Line Out 4	AES In 7/8
S	Cold				
L	Screen				
M	Hot	Mic In 3 A	Line In 5	Line Out 5	AES In 9/10
N	Cold				
T	Screen				
U	Hot	Mic In 4 A	Line In 6	Line Out 6	AES In 11/12
V	Cold				
P	Screen				
a	Hot	Mic In 3 B	Line In 7	Line Out 7	AES In 13/14
b	Cold				
W	Screen				
c	Hot	Mic In 4 B	Line In 8	Line Out 8	AES In 15/16
d	Cold				
Z	Screen				
k	Hot		Line In 9	Line Out 9	AES Out 1/2
l	Cold				
p	Screen				
m	Hot		Line In 10	Line Out 10	AES Out 3/4
n	Cold				
t	Screen				
u	Hot		Line In 11	Line Out 11	AES Out 5/6
v	Cold				
z	Screen				
AA	Hot		Line In 12	Line Out 12	AES Out 7/8
BB	Cold				
w	Screen				
x	Hot		Line In 13	Line Out 13	AES Out 9/10
y	Cold	Line In 2			
CC	Screen				
DD	Hot		Line In 14	Line Out 14	AES Out 11/12
EE	Cold	Line In 1			
KK	Screen				
LL	Hot		Line In 15	Line Out 15	AES Out 13/14
MM	Cold	Line In 3			
FF	Screen				
HH	Hot		Line In 16	Line Out 16	AES Out 15/16
JJ	Cold	Line In 4			
NN	Screen				

Relay Control Unit (Fader Start)



RELAY CONNECTORS

Location: **Rear of Relay Contol Unit**

Mating connector required: 37–way D type male

PINOUT : 37 WAY RELAY LOOP D'S

MAX CURRENT THROUGH EACH PAIR : 0.5A

MAX VOLTAGE ON RELAY CONTACTS : 100V

'RELAY 1–16'		
	PIN	PIN
RELAY 1	1	20
RELAY 2	2	21
RELAY 3	3	22
RELAY 4	4	23
RELAY 5	5	24
RELAY 6	6	25
RELAY 7	7	26
RELAY 8	8	27
RELAY 9	9	28
RELAY 10	10	29
RELAY 11	11	30
RELAY 12	12	31
RELAY 13	13	32
RELAY 14	14	33
RELAY 15	15	34
RELAY 16	16	35

'RELAY 17–32'		
	PIN	PIN
RELAY 17	1	20
RELAY 18	2	21
RELAY 19	3	22
RELAY 20	4	23
RELAY 21	5	24
RELAY 22	6	25
RELAY 23	7	26
RELAY 24	8	27
RELAY 25	9	28
RELAY 26	10	29
RELAY 27	11	30
RELAY 28	12	31
RELAY 29	13	32
RELAY 30	14	33
RELAY 31	15	34
RELAY 32	16	35

'RELAY 33–48'		
	PIN	PIN
RELAY 33	1	20
RELAY 34	2	21
RELAY 35	3	22
RELAY 36	4	23
RELAY 37	5	24
RELAY 38	6	25
RELAY 39	7	26
RELAY 40	8	27
RELAY 41	9	28
RELAY 42	10	29
RELAY 43	11	30
RELAY 44	12	31
RELAY 45	13	32
RELAY 46	14	33
RELAY 47	15	34
RELAY 48	16	35

'RELAY 49–64'		
	PIN	PIN
RELAY 49	1	20
RELAY 50	2	21
RELAY 51	3	22
RELAY 52	4	23
RELAY 53	5	24
RELAY 54	6	25
RELAY 55	7	26
RELAY 56	8	27
RELAY 57	9	28
RELAY 58	10	29
RELAY 59	11	30
RELAY 60	12	31
RELAY 61	13	32
RELAY 62	14	33
RELAY 63	15	34
RELAY 64	16	35

OPTO–ISOLATED READER INPUTS

Location: **Rear of Relay Control Unit**

Mating connector required: 37–way D type male

OPTO–ISOLATED READER INPUTS : 'OPTO INPUT 1–16'

Notes :

+5v MUST be connected via 470 ohm resistor to limit current into opto inputs to 10mA.

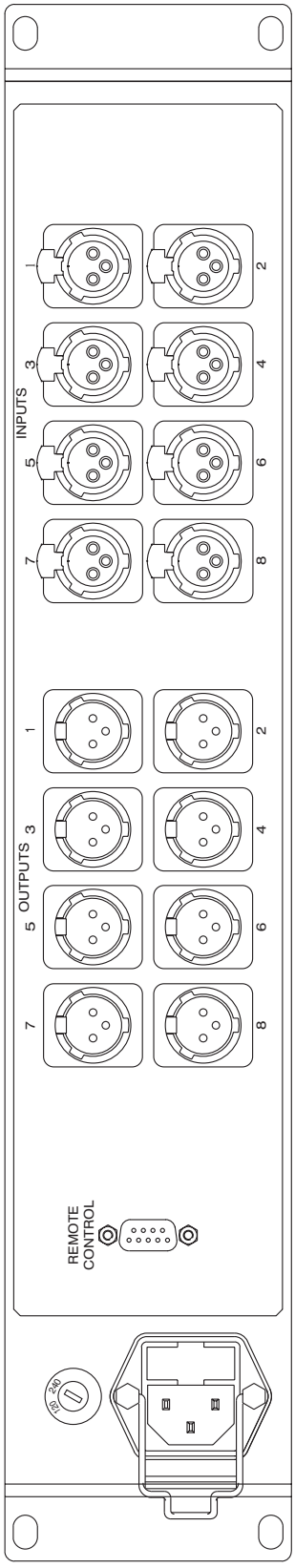
Rec Tally MUST be connected via a series 2.7k ohm resistor to limit current into opto inputs.

Record & Play Tallies for Multitrack shown below are Active Low.

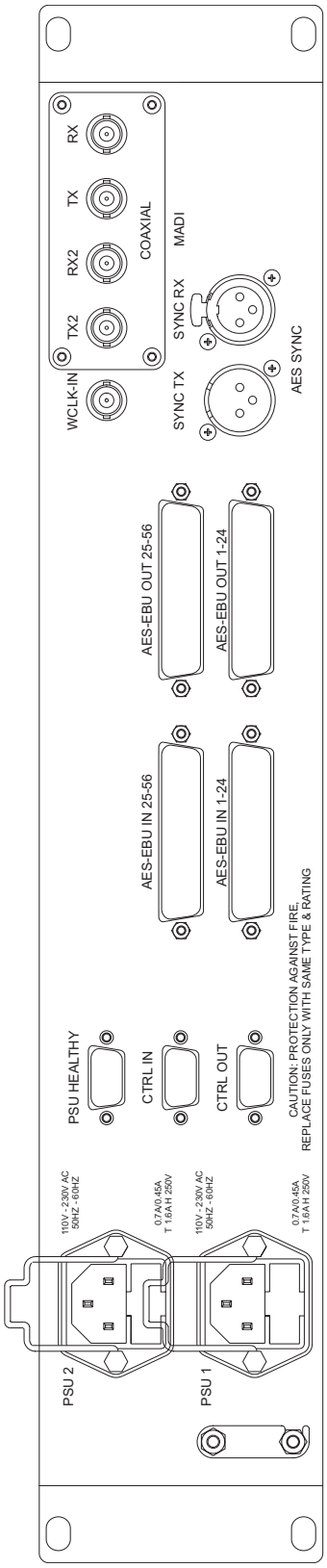
To make Multitrack Rec & Play Tallies High, connect Relay Pin #1 via a 470 ohm resistor to the +5V (Record) line, and connect Relay Pin #20 to +0v without any resistor.

'OPTO–INPUT 1–16'		
	PIN	**PIN**
INPUT 1	1	20
INPUT 2	2	21
INPUT 3	3	22
INPUT 4	4	23
INPUT 5	5	24
INPUT 6	6	25
INPUT 7	7	26
INPUT 8	8	27
INPUT 9	9	28
INPUT 10	10	29
INPUT 11	11	30
INPUT 12	12	31
INPUT 13	13	32
INPUT 14	14	33
INPUT 15	15	34
INPUT 16	16	35

Remote 8 Channel Level Control Unit



Multichannel AES I/O Unit



AES-EBU IN - Standard I/O

Location: **Rear of Multichannel AES I/O Unit**

Mating connector required: 37-way D type male

Pin No.	Signal type	Channel
37	Hot	AES 1AB In
36	Cold	
18	Screen	
17	Hot	AES 2AB In
16	Cold	
35	Screen	
34	Hot	AES 3AB In
33	Cold	
15	Screen	
14	Hot	AES 4AB In
13	Cold	
32	Screen	
31	Hot	AES 5AB In
30	Cold	
12	Screen	
11	Hot	AES 6AB In
10	Cold	
29	Screen	
28	Hot	AES 7AB In
27	Cold	
9	Screen	
8	Hot	AES 8AB In
7	Cold	
26	Screen	
25	Hot	AES 9AB In
24	Cold	
6	Screen	
5	Hot	AES 10AB In
4	Cold	
23	Screen	
22	Hot	AES 11AB In
21	Cold	
3	Screen	
2	Hot	AES 12AB In
1	Cold	
20	Screen	

AES-EBU OUT - Standard I/O

Location: **Rear of Multichannel AES I/O Unit**

Mating connector required: 37-way D type male

Pin No.	Signal type	Channel
37	Hot	AES 1AB Out
36	Cold	
18	Screen	
17	Hot	AES 2AB Out
16	Cold	
35	Screen	
34	Hot	AES 3AB Out
33	Cold	
15	Screen	
14	Hot	AES 4AB Out
13	Cold	
32	Screen	
31	Hot	AES 5AB Out
30	Cold	
12	Screen	
11	Hot	AES 6AB Out
10	Cold	
29	Screen	
28	Hot	AES 7AB Out
27	Cold	
9	Screen	
8	Hot	AES 8AB Out
7	Cold	
26	Screen	
25	Hot	AES 9AB Out
24	Cold	
6	Screen	
5	Hot	AES 10AB Out
4	Cold	
23	Screen	
22	Hot	AES 11AB Out
21	Cold	
3	Screen	
2	Hot	AES 12AB Out
1	Cold	
20	Screen	

AUX AES-EBU IN - Optional Expansion 1 or 2 Cards

Location: **Rear of Multichannel AES I/O Unit**

Mating connector required: 50-way D type male

Pin No.	Signal type	Channel	
		1 Exp. Card	2 Exp.Card
33 49 16	Hot Cold Screen	AES 13AB In	AES 13AB In
15 32 48	Hot Cold Screen	AES 14AB In	AES 14AB In
31 47 14	Hot Cold Screen	AES 15AB In	AES 15AB In
13 30 46	Hot Cold Screen	AES 16AB In	AES 16AB In
29 45 12	Hot Cold Screen	AES 17AB In	AES 17AB In
11 28 44	Hot Cold Screen	AES 18AB In	AES 18AB In
27 43 10	Hot Cold Screen	AES 19AB In	AES 19AB In
9 26 42	Hot Cold Screen	AES 20AB In	AES 20AB In
25 41 8	Hot Cold Screen		AES 21AB In
7 24 40	Hot Cold Screen		AES 22AB In
23 39 6	Hot Cold Screen		AES 23AB In
5 22 38	Hot Cold Screen		AES 24AB In
21 37 4	Hot Cold Screen		AES 25AB In
3 20 36	Hot Cold Screen		AES 26AB In
19 35 2	Hot Cold Screen		AES 27AB In
1 18 34	Hot Cold Screen		AES 28AB In

AUX AES-EBU OUT - Optional Expansion 3 or 4 Cards

Location: **Rear of Multichannel AES I/O Unit**

Mating connector required: 50-way D type male

Pin No.	Signal type	Channel	
		3 Exp. Card	4 Exp.Card
33 49 16	Hot Cold Screen	AES 13AB Out	AES 13AB Out
15 32 48	Hot Cold Screen	AES 14AB Out	AES 14AB Out
31 47 14	Hot Cold Screen	AES 15AB Out	AES 15AB Out
13 30 46	Hot Cold Screen	AES 16AB Out	AES 16AB Out
29 45 12	Hot Cold Screen	AES 17AB Out	AES 17AB Out
11 28 44	Hot Cold Screen	AES 18AB Out	AES 18AB Out
27 43 10	Hot Cold Screen	AES 19AB Out	AES 19AB Out
9 26 42	Hot Cold Screen	AES 20AB Out	AES 20AB Out
25 41 8	Hot Cold Screen		AES 21AB Out
7 24 40	Hot Cold Screen		AES 22AB Out
23 39 6	Hot Cold Screen		AES 23AB Out
5 22 38	Hot Cold Screen		AES 24AB Out
21 37 4	Hot Cold Screen		AES 25AB Out
3 20 36	Hot Cold Screen		AES 26AB Out
19 35 2	Hot Cold Screen		AES 27AB Out
1 18 34	Hot Cold Screen		AES 28AB Out